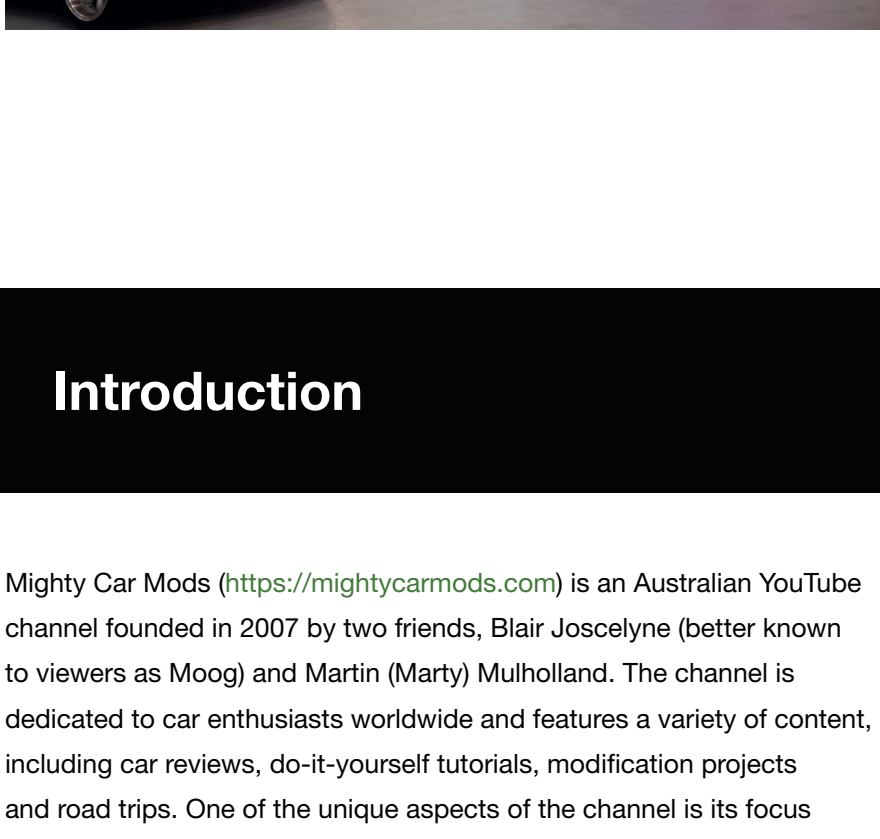


Mighty Car Mods Accelerates Data Storage with Seagate Drives

mightycar.mods

YouTube channel Mighty Car Mods looked to modernise its data storage and keep its AV workflow running like a fine-tuned engine. Seagate®, with decades of ‘drive’ experience, was able to meet the team’s needs and keep them on track for years to come.

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Key Concepts

- Seagate Exos®: High reliability for private cloud, public cloud and traditional IT
- 12 high-density drive slots; top controller features and performance

Introduction

Mighty Car Mods (<https://mightycar.mods.com>) is an Australian YouTube channel founded in 2007 by two friends, Blair Jocelyne (better known to viewers as Moog) and Martin (Marty) Mulholland. The channel is dedicated to car enthusiasts worldwide and features a variety of content, including car reviews, do-it-yourself tutorials, modification projects and road trips. One of the unique aspects of the channel is its focus on modifying cars on a budget, which has helped to attract a large and dedicated fan base.

As a business, Mighty Car Mods generates revenue through a variety of channels. One of their primary sources of income is through advertising revenue from YouTube, where the channel has over three million subscribers and hundreds of thousands of views per video. Mighty Car Mods also sells related merchandise, which results in supplemental income. Additionally, the channel has partnered with multiple sponsors, including car parts manufacturers and automotive companies, to showcase their products and provide sponsored content.

Their Story

Mighty Car Mods’ mission is to educate and entertain their viewers through their own passion for automotive and tech subjects, as well to encourage other people to get their hands dirty and learn more about their own vehicles.

According to cohort Marty Mulholland, YouTube changed broadcasting in a big way, and while it may appear that its bigger channels simply sailed into popularity, the truth is many were started with an idea and minimal technology. While Mighty Car Mods has just to be Australia’s most-watched Automotive show, it began with just Marty and Moog, a camera, a laptop, and some tools on a driveway in suburban Sydney.

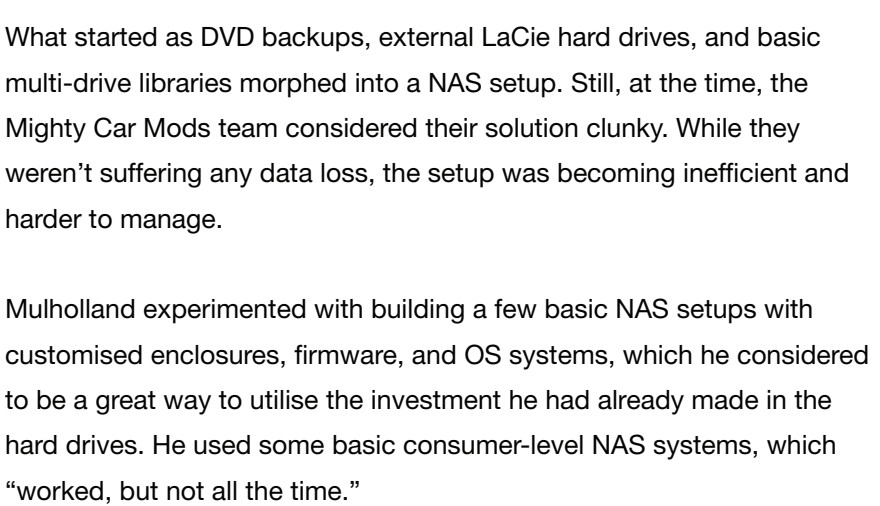
“We did everything,” Mulholland said, “including shooting, editing, voiceovers, data wrangling, uploading, and publishing, all when these things had higher barriers to entry than they do (now), nearly 16 years later. We were always pushing the limits of available tech, but on a small budget; from cameras that shot 720p video to internal hard drives to now shooting high bitrate 4k and needing to find appropriate storage to manage such a large catalogue of videos.”

The Mighty Car Mods audience wants to be entertained and educated, according to Mulholland. While the show initially focused on DIY projects, it has slowly morphed into being about adventures and inspiration for others to work on or use their cars. Viewers care about quality videos being released regularly, that are entertaining while featuring enough technical background to also be educational.

Running Mighty Car Mods as a business is a necessity, so those involved can keep making quality videos. The two creators realised many years ago the show would need to cover its costs, and the involved costs slowly rose as featured car builds got more complex, travel became more frequent, and the technology required to manage and produce the videos went up in price. Their short-term aim was to cover their immediate costs. Their longer term needs involved securing locations to shoot, like their garage in Sydney, so that they had the flexibility to create high-quality videos.

The cohosts noted how their work environment moves quickly.

“People started watching content on their phones,” Mulholland said, “and, suddenly, we aren’t rotating the screen 90 degrees anymore, and we have arrived in the ‘vertical age’ as desktop viewing drops. So, we’re keeping up with those changes, but also staying true to our original home.”



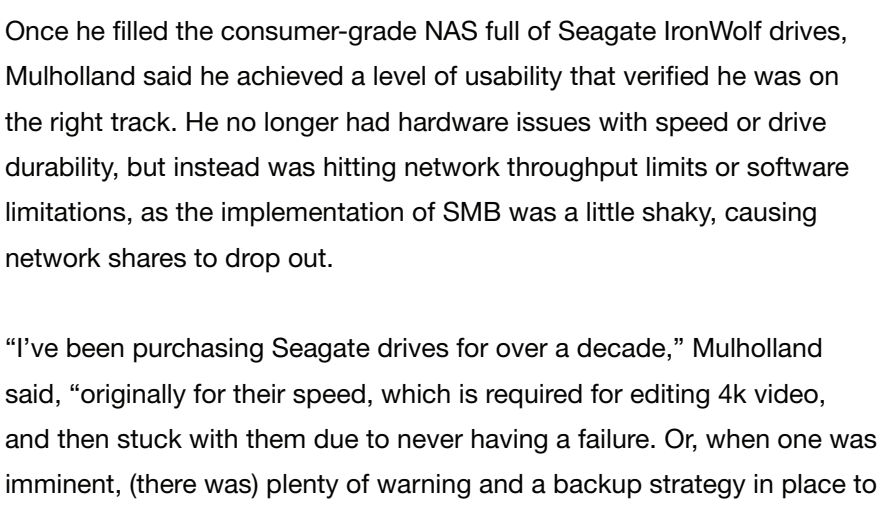
Their Goal

“The goal has been to have a stable, reliable and scalable solution to our storage needs,” Mulholland said, “which means our creative output can be higher without having to constantly have our heads under the bonnet trying to troubleshoot. Less downtime means more work done for our viewers to enjoy.”

Mighty Car Mods sought to improve their workflow while reducing maintenance time and cost. They intended to house their video library on a rock-solid platform that could handle multiple users, demonstrate high enough performance to properly access the drives, and provide a network interface with plenty of bandwidth. The system needed redundancy options so if something went wrong, it could be managed easily and quickly.

Mulholland speculated that the NAS setup he was using previously had shortcomings. First, because he was using desktop-grade drives, and second, because it just wasn’t set up for a multi-user, centralised editing environment, which was the goal to help manage the large library. In a multi-user editing environment, being able to have centralised data (e.g., video footage, audio, etc.) provides huge efficiency.

“Editing is all about flow,” Mulholland said. “If you keep having to jump technical hurdles, it slows your creativity right down.”



Their Problem

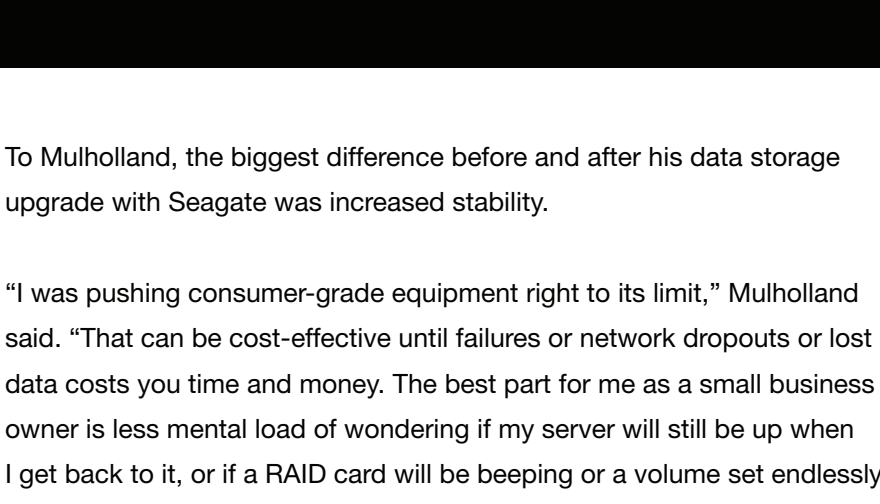
“With lots of data comes great responsibility,” Mulholland said, “and in our case, the ones and zeros that somehow mash up into a moving picture and are published onto the internet are very valuable to us.”

What started as DVD backups, external LaCie hard drives, and basic multi-drive libraries morphed into a NAS setup. Still, at the time, the Mighty Car Mods team considered their solution clunky. While they weren’t suffering any data loss, the setup was becoming inefficient and harder to manage.

Mulholland experimented with building a few basic NAS setups with customised enclosures, firmware, and OS systems, which he considered to be a great way to utilise the investment he had already made in the hard drives. He used some basic consumer-level NAS systems, which “worked, but not all the time.”

“I’ve been lucky to have every single video clip we’ve ever made in a library that I’ve maintained over the entirety of the show,” Mulholland said. “My background was in audio engineering, which taught me early on that losing data for an expensive recording session was a great risk to my job security, so I’ve always been careful.”

“The worst outcome here is losing hours of work,” Mulholland said. “Due to the way the editing software constantly updates its files, you’re usually okay. But again, the slowdowns affect your creativity, and the more users you add to this, the worse it gets. It also puts me down the path of spending more time as IT manager instead of car modifier, editor, producer, director, etc.”



Their Solution

Mighty Car Mods purchased four dozen Seagate IronWolf® hard drives over several years, along with an SSD DAS system. The YouTube show runners also recently implemented an Exos® AP 2U12 system.

Seagate’s Exos AP 2U12 Storage Server provides high-performance computing and cutting-edge mass storage in a single system. It features 12 high-density drive slots along with superior controller attributes, features, and performance for space-efficient deployments.

As they installed these new solutions, the Mighty Car Mods team made additional infrastructure improvements, including a shift to small form-factor pluggable (SFP) interfacing for some of the team’s longer runs, as well as new copper for client machines.

Once he filled the consumer-grade NAS full of Seagate IronWolf drives, Mulholland said he achieved a level of usability that verified he was on the right track. He no longer had hardware issues with speed or drive durability, but instead was hitting network throughput limits or software limitations, as the implementation of SMB was a little shaky, causing network shares to drop out.

“I’ve been purchasing Seagate drives for over a decade,” Mulholland said, “originally for their speed, which is required for editing 4k video, and then stuck with them due to never having a failure. Or, when one was imminent, (there was) plenty of warning and a backup strategy in place to fix the issue.”

The Mighty Car Mods team says they’ve maintained a good relationship with their Seagate team in Australia.

“They first got in touch after we did some behind the scenes’ of our tech setup,” Mulholland said, “and suggested a few products that could help. At that stage, we had some edit suites with direct attached storage. Seagate offered me some high-capacity SSDs, which I put in a RAID array that was the fastest storage system we had used to date, and it ran successfully until we made the switch to server-based editing. From there, we stayed in touch and, when I explained I had made the switch to a NAS system for editing, not just backup, the team asked if I’d like to try out one of their Exos 2U12 systems.”

At one point, the Mighty Car Mods team considered an alternative, full DIY solution. However, it would have required additional time to learn, from the inside out, how best to set up such a system and, at the level of required storage and performance, they knew going that route would be comparatively expensive. They also looked at vendors who make editing hardware and software packages that are aimed squarely at people in their same situation. Mulholland admitted that, while they looked promising, when he dug a little deeper, he saw that the hardware itself was quite basic.

“I wanted a solution that was more flexible and could grow as my needs did,” Mulholland said, “without being hit hard for ‘extras’ that are mostly part of a profit structure rather than real-world costs of software parts.”

Mulholland considers their implementation to be fairly straightforward. He required that the solution host SMB shares to which the team’s Apple OS-based systems could connect. The intent was that the server would store the video and audio, as well as the libraries themselves that the editing software uses, resulting in the ability for any workstation to open a library, without needing to hunt for files, reconnecting, or time wasted chasing broken links.

As part of this storage upgrade project, Mulholland found he was going back to the basics of his network infrastructure itself.

“I’d been upgrading parts of this network over the years as my needs changed,” Mulholland said, “and the Exos system could slot into it without too much fuss.”

This then allowed for seamless setup of their storage-integrated, assignment of IPs, additions of pools, volumes, and shares, then users, and then Mulholland felt he could “just leave it on forever.”

Their Success

To Mulholland, the biggest difference before and after his data storage upgrade with Seagate was increased stability.

“I was pushing consumer-grade equipment right to its limit,” Mulholland said. “That can be cost-effective until failures or network dropouts or lost data is less your time and money. The best part for me as a small business owner is mental load of wondering if my server will still be up when I get back to it, or if a RAID card will be beeping or a volume set endlessly rebuilding. I no longer feel like an IT manager that’s had little sleep while battling with RAID setups.”

Mulholland and the Mighty Car Mods team also consider their Seagate storage’s scalability to be a huge benefit.

“It’s a system that can grow with us as ever more data hungry equipment eats more storage space,” Mulholland said.

Following their successful data storage upgrade with Seagate, the Mighty Car Mods team shares the following advice for other creative organisations considering doing the same.

“Have a close look at what the cost of unstable or unsuitable systems are,” Mulholland said. “A pro- or enterprise-grade solution can feel like a daunting step up from the warm embrace of a basic and easy-to-understand system. Once you see the benefits of stability, speed, and scalability, it can save hours and hours of downtime and potentially help prevent data loss (and) your creative output (being) lowered by technology getting in the way. “

“I’ve been purchasing Seagate drives for over a decade, originally for their speed, which is required for editing 4k video, and then stuck with them due to never having a failure. Or, when one was imminent, (there was) plenty of warning and a backup strategy in place to fix the issue.”

Martin (Marty) MulhollandH6
Cofounder/Co-host Mighty Car Mods

Related Resources

Exos AP 2U12 >
The Seagate® Exos® AP 2U12 storage server combines high-performance computing and cutting-edge mass storage in a single system. This all-in-one, expandable, low-cost storage server solution supports growing businesses with high performance, high capacity and high availability.

Exos E Series >
Seagate Exos E hard drives are designed to work and perform consistently in enterprise-class workloads.

Exos X Series Hard Drives >
For proven reliability, lower TCO, and ironclad enterprise security.